1971

A UNITED STATES DEPARTMENT OF COMMERCE PUBLICATION

Ship Operations Report 1971
National Oceanic and Atmospheric Administration

U.S. DEPARTMENT OF COMMERCE

Foreword

This is the third annual report on major operations of NOAA vessels. The report is presented by project in numerical order with an alphabetic designation of the ship engaged in each operation. Additional information can be obtained from the Director, National Ocean Survey, Rockville, Maryland 20852.

Coast and Geodetic Survey
Ship Operations Report 1969

Ship Operations Report 1970
National Ocean Survey

Ship Operations Report 1971
National Oceanic and Atmospheric
Administration

Legend

OC	OCEANOGRAPHER
DI	DISCOVERER
RE	RESEARCHER
SU	SURVEYOR
FA	FAIRWEATHER
RA	RAINIER
MI	MT. MITCHELL
PF	PATHFINDER
PE	PEIRCE
WH	WHITING
MA	McARTHUR
DA	DAVIDSON
FE	FERREL
RU/HE	RUDE/HECK

1971 Highlights

Letter No. 4, dated July 30, 1971, from NOAA's Administrator established the Office of Fleet Operations within the National Ocean Survey as "...a separate entity responsible for the management of the NOAA Fleet." Under its auspices this Ship Operations Report for the calendar year was completed.

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The PATHFINDER, shown on the cover, returned to Seattle on September 10, to begin preparations for deactivation. Thus ended twenty-nine years of hydrographic surveying throughout Alaska and the Pacific Ocean. Built for the U. S. Department of Commerce, Coast and Geodetic Survey, she was commissioned in 1942.

PATHFINDER's place in history is documented in the Office of Naval Records and History. On August 31, 1942, she was acquired by the U. S. Navy, then armed, outfitted for naval service, and placed in operation to survey uncharted waters in support of allied amphibious operations in the Southwest Pacific. She experienced some fifty bombing raids while working in combat zones and sustained damage off Okinawa when a Kamikaze airplane crashed into the stern gun platform and caught fire. Her anticraft guns destroyed two Japanese planes in Guadalcanal in 1943. After V-J Day, the PATHFINDER conducted a series of surveys in Japanese waters in cooperation with the Allied Occupation. The ship was returned to C&GS in 1946, and had worked out of Seattle since that time.

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During 1971, the most comprehensive, interdisciplinary, estuarine investigation, during a specific time period, was undertaken in Boston Harbor. This extensive baseline survey was an outgrowth of direct and photogrammetric tidal current surveys traditionally undertaken by NOS. Disclosure of the diverse complexities within the marine environment will serve as an indispensable aid in policy making and planning for coastal zone management.

This project, coordinated by the National Ocean Survey, had a variety of participants:

National Ocean Survey
- Oceanographic Division - Project Coordinator
- Coastal Mapping Division
- Photogrammetric Division, AMC
- Photogrammetric Field Party 62, AMC
- NOAA Ships FERREL and PEIRCE

National Aeronautics and Space Administration
U. S. Coast Guard
Lockwood, Kessler, and Bartlett--Long Island University
Grumman Aerospace Corporation
U. S. Navy
Massachusetts Institute of Technology
New England Aquarium

1971 Field Season

Ship	Commanding Officer	Project
Class I		
OCEANOGRAPHER OSS 01	Capt. M.J. Tonkel	RP-1, RP-2, RP-4, RP-5, RP-6; SP-6
DISCOVERER OSS 02	Capt. R.C. Munson	RP-8, RP-9, RP-11
RESEARCHER OSS 03	Capt. S.L. Hollis, Jr.	OPR-425; RP-9 RP-12; SP-2
SURVEYOR OSS 04	Capt. A.R. Benton, Jr.	OPR-394, 421, 497; RP-7
Class II		
FAIRWEATHER MSS 20	Capt. R.H. Houlder	OPR-419, 487
RAINIER MSS 21	Capt. R.F. Lanier	OPR-394, 411, 478; SP-4
MT. MITCHELL MSS 22	Capt. E.K. McCaffrey	OPR-423, 425, 436 438; RP-13; SP-5
PATHFINDER OSS 30	Capt. H.R. Lippold, Jr.	OPR-394, 429, 465, 469; SP-8, 9
Class III		
PEIRCE CSS 28	Cdr. B.I. Williams	OPR-436, 473, 501; RP-14; SP-3
WHITING CSS 29	Cdr. C.H. Nixon	OPR-437, 492
McARTHUR CSS 30	Cdr. D.R. Tibbit	OPR-489; SP-1, 2, 5
DAVIDSON CSS 31	Cdr. R.E. Moses Cdr. G.C. Saladin	OPR-412, 424, 448, 465, 496, 498, SP-3
Class IV		
FERREL ASV 92	Lt. Cdr. R.J. DeRycke	OPR-500
	Lt. Cdr. K.W. Kieninger	OPR-501
RUDE ASV 90 and HECK ASV 91	Lt. Cdr. M.N. Walter Cdr. J. Collins	OPR-467, 479, 480; SP-4, 6, 10

Contents

OPR-394

Deep-Sea Tracklines

Background

Tracklines run under this project are confined to the Pacific Ocean area. They are random runs en route to and from working grounds, or, from port to port, to check published chart accuracy or furnish supplemental information for charting.

1971 Operations

SURVEYOR	Cape Flattery to Tutuila Island, America Samoa
	Chirikof Island to Cape Decision
RAINIER	Across the Gulf of Alaska from lat. 52°00' N, long. 131°10' W to the east side of Kodiak Island
PATHFINDER	Baranof Island, Southeast Alaska to landfall at Trinity Is.
	Kodiak Island to Dixon Entrance

History

1960

PATHFINDER	E leg of westerly line en route Ketchikan to Seward, Alaska
	W leg of westerly line en route Kodiak to Dutch Harbor, Ala.
SURVEYOR	Cape Flattery, Washington to Dutch Harbor, Alaska
	Attu, Alaska to Cape Flattery, Washington

1961

PATHFINDER	From Cape Bartolome, Prince of Wales Island westerly to long. 147°30', thence northerly to entrance of Resurrection Bay, Alaska
	Deep-sea sounding line, oceanographic and bathythermographic observations, Gulf of Alaska
PIONEER	From Point Reyes, California to Kodiak, Alaska
	Oahu Island to Point Piedras Blancas, California, thence to Alameda
SURVEYOR	En route from Hawaii to Shumagin Islands
	From Unimak Pass, Alaska, to Cape Flattery, Washington

1962

PATHFINDER	Cape Flattery, Washington to San Francisco, California
	San Francisco, California to Hawaii

1962

PATHFINDER	Honolulu, Hawaii to Christmas Island
	Christmas Island en route to Hawaii
	Honolulu en route to Cape Flattery and return Honolulu
	Kauai Island, Hawaii to Cape Flattery, Washington
PIONEER	From Oakland, California to N side of Oahu Island, Hawaii
	N to lat. 35°30' E to a landfall of San Simeon Bay off the California coast
	From Oakland, California along lat. 36°30'
	Honolulu en route Hilo to point 100 miles SW of Hawaii Island, thence to W point of the Island and then around to S side of Hilo
	From N side of Oahu to San Francisco Bay area
SURVEYOR	Cape Flattery, Washington, to Point Arena, California
	Cape Flattery, Washington, to Unalaska, thence N to Bering Strait
	Bering Strait to Adak
	Adak to Kodiak, Alaska
	Cape Chiniak en route Seward, Alaska
	Cape Resurrection, Alaska, en route to Monti Bay, Alaska
	Ocean Cape, Alaska to Cape Flattery, Washington

1963

PATHFINDER	Cape Flattery to Kauai Island, Hawaii
	Kauai Island, Hawaii to Cape Flattery, Washington
	From Tatoosh Island, Washington to Guam via Midway Island
	Guam to Kauai Island via Midway Island
	Pearl Harbor en route Cape Flattery, Washington
PIONEER	Oakland, California to Hawaii
	Hawaii to Oakland, California
	San Francisco, California to Hawaii
	Hawaii to San Francisco, California
	Honolulu en route to Oakland, California
SURVEYOR	Cape Flattery, Washington to Kauai Channel, Hawaii
	From long. 160° W to Cape Flattery, Washington
	From Oakland, California en route Adak, terminated at 155° W long.
	From 155th meridian en route Cape Flattery, Washington

1964

PATHFINDER	Cape Flattery, Washington to Oahu Island, Hawaii
	From NW end of Oahu Island to Kodiak Naval Base, Alaska

1964

PIONEER	San Francisco, California to Honolulu, Hawaii
	Honolulu, Hawaii to San Francisco, California
SURVEYOR	Cape Flattery, Washington to Point Reyes, California
	Transit of Oregon State University Gravity Range between Yaquina Head and Heceta Head, Oregon
	Santa Cruz, California to Barbers Point, Oahu, Hawaii
	Barren Islands en route to Seattle via Great Circle Course
	Cape Flattery, Washington to Point Reyes, California
	Point Reyes, California to Gulf of Alaska
	From SW of Kahuka Point, Oahu, Hawaii en route to Seattle

1965

PATHFINDER	Cape Flattery, Washington to Oahu, Hawaii
	Oahu, Hawaii to Cape Flattery, Washington
	Dixon Entrance to Seward, Alaska
PIONEER	Point Reyes, California to Oahu, Hawaii
	From lat. 40° N, long. 152°29' W to Oakland, California
SURVEYOR	Cape Flattery, Washington to Point Reyes Gravity Calibration Range, California
	From Kaena Point, Oahu Island to Point Reyes, California
	Point Reyes, California to Destruction Island, Washington
	From Cape Johnson, Washington to Cape Mendocino, California

1966

PATHFINDER	Cape Flattery, Washington to Oahu, Hawaii
	Oahu, Hawaii to point off the west coast of Mexico, thence N to Cape Flattery, Washington
SURVEYOR	St. George Reef, California to 39° N, 135° W
	SW of Bodega Head, California to Cape Flattery, Washington
	Cape Flattery, Washington to 45° N, 155° W
	NE of Oahu, Hawaii to Cape Flattery, Washington
	Off California coast to Cape Flattery, Washington

1967

DAVIDSON	Cristobal, Panama to Cabo San Luzaro, Mexico with towed magnetometer
	San Diego to Monterey, California with towed magnetometer
	San Francisco to Cape Flattery, Washington with towed magnetometer
McARTHUR	Panama Canal Zone to Acapulco, Mexico
	Acapulco, Mexico to San Diego, California

1967

McARTHUR	San Diego, California to Lahaina, Maui, Hawaii
PATHFINDER	Cape Flattery, Washington to Point Conception, California
	San Diego, California to Cape Flattery, Washington
	Kodiak, Alaska to Cape Spencer, Alaska
SURVEYOR	Destruction Island, Washington to Oahu, Hawaii
	Tracklines were run during underway phases of the Line Islands Experiment
	Honolulu, Hawaii en route to Mazatlan, Mexico
	Mazatlan, Mexico to Islas De Revillagigedo
	Off coast of Mexico en route Ensenada, Mexico
	Ensenada, Mexico to San Francisco, California
	San Francisco Gravity Calibration Range to Cape Flattery, Washington
	Cape Flattery, Washington to Barren Islands, Alaska
	Hawaii to Cape Flattery, Washington

1968

DAVIDSON	Oregon-Washington border to Santa Cruz Island, Calif. via San Francisco, California with towed magnetometer
	San Pedro Basin between Anacapa Islands and Long Beach, California
	San Diego, California to Cape Flattery, Washington
	Keku Straits, Alaska to Cape Flattery, Washington
	Cape Flattery, Washington to Cape Ommaney, SE Alaska
FAIRWEATHER	Costa Rica to entrance to Acapulco Harbor, Mexico
	Acapulco, Mexico en route to San Diego, California
OCEANOGRAPHER	Cape Flattery, Washington en route to San Francisco, Calif.
	San Francisco, California en route to Sea Channel study area
	Adak via Adak signature line
	Adak en route Mendocino area
	Mendocino area en route Cape Flattery, Washington
	En route Norton Sound, Alaska
	En route Cape Flattery, Wash. via Dutch Harbor, Alaska
	En route San Francisco, California
	En route to Cobb Seamount
PATHFINDER	Cape Flattery, Washington to Kodiak, Alaska
	En route from Kodiak, Alaska to Clarence Strait, Alaska
SURVEYOR	Off mouth of Columbia River to a land tie in Adak Strait
	Adak, Alaska to the SE end of Chugul Pass
	From 49°00' N, 174°30' W, to a land tie off Vancouver Island
	Cape Flattery, Washington to Point Reyes, California

1968

SURVEYOR	San Francisco, California to Dutch Harbor, Alaska
	Dutch Harbor, Alaska to Nome, Alaska
	Off NE Cape St. Lawrence Island to land tie off N of Unalaska Island
	Dutch Harbor, Alaska land tie to NE Cape, Norton Sound, Alaska
	S of Nome, Alaska to land tie in Unalaska Bay, thence to land tie off Apavawook Cape, St. Lawrence Island, thence to land tie off Great Sitkin Island
	Adak, Alaska to Midway
	Midway to Oahu Island, Hawaii
	From 44°03.4' N, 160°14.3' W to Point Reyes gravity calibration range
	San Francisco, California en route to Cape Flattery, Wash.

1969

McARTHUR	Honolulu, Hawaii to Cape Flattery, Washington
OCEANOGRAPHER	Cape Flattery, Wash. to Rodman Naval Station, Canal Zone
	Resumed W of Panama and ended off Point Cabrillo, Calif.
PATHFINDER	Cape Flattery, Washington to Port Hueneme, California
RAINIER	From land tie off Point Conception, California to point off Cape Mala, Panama
	From Rodman Naval Station, Balboa en route San Diego, Calif.
SURVEYOR	Dutch Harbor, Alaska to San Francisco, California
	Drakes Bay, California to Cape Flattery, Washington
	Coronation Island to Dutch Harbor, Alaska
	Dutch Harbor, Alaska and return Norton Sound, Alaska
	Norton Sound, Alaska to Dutch Harbor, Alaska and then to Queen Charlotte Islands

1970

PATHFINDER	To and from Hawaii from Cape Flattery, Washington
	Cape Fairweather, Alaska to Barren Island, Alaska
	Tonki Cape, Afognak Island, E across the Gulf of Alaska to the vicinity of Landfall Harbor Point, Lituya Bay
RAINIER	From Dutch Harbor, Alaska en route St. Lawrence Island
	South Cape en route Adak, Alaska
	Adak, Alaska to St. Lawrence Island
	Along lat. 55°07' N, between Shumagin Islands and Dixon Entrance to long. 133°40' W
SURVEYOR	Pearl Harbor en route to Cape Flattery, Washington

OPR-411

Hydrographic Surveys
Southern California

Background

This Project was undertaken in 1967 to update the nautical charts and bathymetric maps of the southern California coast.

1971 Operations

The basic hydrographic survey operations conducted by the RAINIER in southern California included an area east of San Clemente Island, and work on seven boat sheets along the coast (H-9245, and H-9248 through H-9253). Hi-Fix electronic control, using hyperbolic mode, Type A moderate power on 1799.5 $_{k}H_{z}$, was used for position control of both ship and launch survey work.

History

Two shoals near Santa Cruz and Santa Rosa Island were investigated in 1967, with confirmation of one only; in 1968, hydrography and coring were completed in the Santa Monica area; during nine weeks operations in 1969, an area of approximately 2,000 sq. miles of hydrography south of San Nicholas Island was completed; in 1970, both the DAVIDSON and McARTHUR worked the area.

OPR-412

Hydrographic Survey
Puget Sound

Background

Acquisition of data needed to revise nautical charts and to control hydrographic surveys in Puget Sound area.

1971 Operations

The DAVIDSON conducted a hydrographic survey of Lake Washington. Work began on November 26 and was completed on December 14. Area surveyed: 157 Marsden Square. Accomplishments included: 59 bottom samples, 162.1 lineal nautical miles of sounding lines; 3 hydrographic stations established; and 23 triangulation stations recovered.

History

In 1966 the BOWIE accomplished a visually-controlled hydrographic survey and the LESTER JONES conducted another controlled by photogrammetric methods and sextant fixes. The HODGSON in 1967 accomplished four 1:10,000 sheets. Operations were resumed in the area in 1969 by the DAVIDSON. Investigations for chart corrections were made in Hood Canal, Dabob Bay, and Elliott Bay. A tagline survey of Navy Piers 90 and 91, Seattle, was conducted. The FAIRWEATHER's 1970 hydrography was visually controlled; three 1:5,000 sheets on Elliott Bay were completed. Also, a special survey to determine the effect of erosion off Ediz Hook, Port Angeles, was conducted in cooperation with the U. S. Army Corps of Engineers.

OPR-419

Hydrographic Surveys
West Coast, Hawaii Island

Background

Basic hydrographic surveys are required to maintain the accuracy of existing charts and to extend coverage of the waters around the Hawaiian Islands. Surveys around Hawaii Island will provide basic data for the required 1:80,000 scale navigation charts.

1971 Operations

The FAIRWEATHER's work centered on the Kona Coast. Boatsheets for Puako and Anaehoomalu Bays were completed; harbor investigations were made in Kiholo Bay and Kaneohe Bay. A bathythermograph trackline with weather observations was accomplished to and from the Hawaiian working grounds. Field work progressed rapidly; the on-board PDP/8E computer and complot unit accomplished all the processing for three 1:5,000 and two 1:10,000 boatsheets.

History

The SURVEYOR began field work in 1961 on this Project; work continued in 1963, 1965, 1968, and 1969. In 1970, the PATHFINDER completed surveys in Alenuihaha Channel between Maui and Hawaii.

OPR-421

SEAMAP
Pacific Ocean Surveys

Background

This project popularly known as SEAMAP, an acronym for Scientific Exploration and Mapping Program, was initiated after the National Academy of Sciences, Committee on Oceanography, reported a need for ocean-wide surveys. The ultimate goal of the program is to systematically map deep ocean areas, and will require several years for completion.

1971 Operations

The SURVEYOR ran SEAMAP line en route Seattle from Peru followed by operations off the Washington-Oregon coast. This was a systematic geophysical survey, including seismic reflection profiling of the area between the 42nd N parallel and the 48th N parallel, bounded by the 144th W meridian and the Washington-Oregon coast. Inshore lines were located by radar fixes plotted on large-scale nautical charts.

History

The PIONEER began work in 1961 and continued operations in 1962; during 1963 and 1964, the SURVEYOR was assigned to the task. She was again assigned to the project in 1967 and 1969.

OPR-423

Hydrographic Surveys
Puerto Rico-Virgin Islands

Background

As part of the basic nautical chart program, work to update surveys and issue large-scale nautical charts for the islands was undertaken in 1969. Both the known and anticipated economic growth of the Commonwealth and the Virgin Islands had intensified Federal and private interests in this program which is expected to extend over a number of years.

1971 Operations

The MT. MITCHELL continued hydrographic surveys and sea level studies along the south shore of Puerto Rico from Point Guayanilla to the vicinity of Santa Isabel.

History

1964-1965--the EXPLORER established stations American, Roig, Sheraton, and Cangrejo, and conducted hydrographic and wire-drag surveys in Vieques Sound; completed hydrographic surveys in San Juan harbor; 1966--the WHITING completed a hydrographic survey of the approaches to and from St. Thomas Harbor (Virgin Islands); 1967--the DAVIDSON began hydrographic and oceanographic surveys east of Vieques Island and installed permanent tide gages at Lameshur Bay, St. John Island; the WHITING observed magnetic stations at the eastern and western ends of Vieques Island; 1968--the WHITING conducted a one-day reconnaissance survey of the harbor entrance to Roosevelt Roads and began hydrographic surveys on the south coast of Puerto Rico at Cape Rojo; 1969--the WHITING continued surveys in the vicinity of and offshore from Guayanilla, continuing along the south coast progressing eastward; 1970--three 1:5,000 harbor surveys were completed in Bahia Guayanilla; two nearshore 1:20,000 sheets were completed. Current stations were installed in several locations; visual targets constructed and located, and Hi-Fix stations established.

OPR-424

Hydrographic Surveys
Nichols Passage, SE Alaska

Background

The objective of this project is to provide data for the updating of existing nautical charts.

1971 Operations

The DAVIDSON accomplished premarking for 1:15,000 aerial photography.

History

1964--The PATTON established nine new 3rd-order stations; 26 stations photo-identified; 1965--the BOWIE ran 1:5,000 hydrography in Tongass Narrows; 1969--The McARTHUR conducted field operations from July through October. Tide gage installed at Metlakatla; four benchmarks were recovered, and levels run at one site.

OPR-425

Deep-Sea Tracklines

Background

Tracklines run under this project number are confined to the Atlantic Ocean area. They are random runs en route to and from working grounds, or, from port to port, to check published chart accuracy and to acquire supplemental information for chart corrections.

1971 Operations

RESEARCHER	Cape San Antonio, Yucatan Channel to vicinity of the Misteriosa Bank
	Miami via shortest route to lat. 25°45', long. 77°13'
MT. MITCHELL	U. S. to Puerto Rico and return; 2,522 nautical miles

History

1962

EXPLORER	Virginia Capes en route to San Juan, Puerto Rico
	Puerto Rico to Virginia Capes
	Virginia Capes to the Gulf of Maine
	Portland, Maine en route Virginia Capes

1963

EXPLORER	Dakar en route San Juan, Puerto Rico
	Puerto Rico en route Norfolk, Virginia

1964

EXPLORER	Norfolk, Virginia to San Juan, Puerto Rico
	San Juan, Puerto Rico to Cape Henry, Virginia

1965

EXPLORER	Norfolk, Virginia to Puerto Rico
	Puerto Rico to Norfolk, Virginia

1966

WHITING	Norfolk, Virginia en route San Juan, Puerto Rico

1967

DAVIDSON	Norfolk, Virginia to Puerto Rico
	Puerto Rico to Norfolk, Virginia
DISCOVERER	Miami, Florida to the gravity range, Cape Charles, Virginia
	En route the project area, Gulf of Maine
WHITING	Puerto Rico to Norfolk, Virginia

1968

DISCOVERER	Miami, Florida to Bridgetown, Barbados
	From 250 miles NE of Barbados to Miami, Florida
WHITING	Norfolk, Virginia en route St. Thomas, Virgin Islands
	San Juan, Puerto Rico en route to Miami, Florida
	Miami, Florida en route Norfolk, Virginia

1969

DISCOVERER	From Miami, Florida to Atlantic Tradewinds Experiment area (ATEX) in the equatorial Atlantic; and between station ECHO and Bridgetown while on Project BOMEX
MT. MITCHELL	Gulf of Mexico
	Barbados to Norfolk, Virginia
OCEANOGRAPHER	After passage through Panama Canal, ran trackline to Gulfport, Mississippi
	Ran lines to and from Barbados and the BOMEX stations
RAINIER	Off Cristobal, Canal Zone to Gulfport, Mississippi
	Gulfport, Mississippi to Bridgetown, Barbados
	To and from Barbados and BOMEX stations
	Bridgetown, Barbados en route to Cristobal, Canal Zone
WHITING	Norfolk, Virginia to San Juan, Puerto Rico
	Puerto Rico to Norfolk, Virginia

1970

DISCOVERER	From the Lesser Antilles project area to Miami, Florida
MT. MITCHELL	To and from Puerto Rico from Norfolk, Virginia

OPR-429

Hydrographic Surveys
Lower Cook Inlet, Alaska

Background

Surveys undertaken to provide basic hydrographic coverage in the area required to update nautical charts.

1971 Operations

A ground survey of Kamishak Bay, Lower Cook Inlet, was undertaken by the PATHFINDER during the field season to determine the elevation of Augustine Volcano. Field work was primarily hydrographic supported by photogrammetric and ground control. Boat sheets involved included: PF 20-1-69; PF 10-3-69.

History

1963--2nd-order electrotape traverse was run and stations identified; 1965--hydrography began at Cape Douglas and extended north and west in Kamishak Bay; establishment and identification control in Kachemak Bay for photogrammetric bridging was completed; 1969--shore stations established at triangulation stations Crow and Juma to control launch hydrography in the vicinity of Augustine Island; hydrographic operations completed in Iniskin Bay; 1970--theodolites and electrochains were used to measure horizontal angles and distance on a quadrilateral extending across Cook Inlet. The objective is to determine possible earth crustal movement in the inlet involving triangulation stations established prior to the 1964 earthquake.

OPR-436

Hydrographic Surveys
Coasts of South Carolina and Georgia

Background

This project is part of a long-range plan for modern hydrographic development and oceanographic observations along the Continental Shelf of the East Coast.

1971 Operations

The PEIRCE undertook a basic hydrographic survey southeast of Charleston, South Carolina; work was completed on one sheet covering the area between lat. 31°35' N and 32°34' N and from long. 79°35' out to the 110 fathom curve.

MT. MITCHELL continued the work started by the high-speed launch and the PEIRCE. Limits of work accomplished were: northern limit--lat. 32°19'30" N; southern limit--lat. 32°19'00" N; eastern limit--long. 80°01'30"; western limit--approximately the 30 foot curve.

History

1963--field work begun by MARMER and PEIRCE; 1966--PEIRCE conducted operations; 1969--RUDE/HECK successfully used the wire-drag system adapted to standard survey methods to investigate reported obstructions in the project area.

OPR-437

Hydrographic Surveys
Coasts of North and South Carolina

Background

Project is part of plan for new chart construction and maintenance of existing coverage.

1971 Operations

The WHITING launches surveyed the entrances to Shallotte, Little River, Mad, Hog, and Tubbs Inlets. Offshore areas were surveyed by ship, and inshore areas by launches. Survey indicates state of inlets at that time. Storms of even slight magnitude easily move the shoals; value of extensive inlet surveys marginal.

History

In 1964 the PEIRCE conducted a hydrographic survey from Winyah Bay, South Carolina to Cape Fear, North Carolina; the WHITING installed two Hiran stations and a portable tide gage during 1965 at Pawleys Island, South Carolina, and conducted a hydrographic survey in Midway Inlet.

OPR-438

Hydrographic Survey
North Carolina Coast

Background

Project is a basic hydrographic survey. Data acquired to be used in bathymetric mapping program and to update nautical charts of the Continental Shelf area.

1971 Operations

The MT. MITCHELL worked on two 1:80,000 scale boatsheets. Sounding lines over the entire area were primary. The ship towed a surface thermistor throughout the entire hydrographic operation. Seven Nansen casts, to obtain sound velocity data, were made.

History

1963-1965--the EXPLORER conducted operations in the Cape Hatteras area. 1970 --the MT. MITCHELL began a hydrographic survey in support of marine charting and bathymetric mapping on the North Carolina coast. Work on boatsheets MI 40-1, -2, -3, -70 was accomplished.

OPR-448

Hydrographic Survey
Keku Strait and Sumner Strait, SE Alaska

Background

Resurveys needed to provide modern bottom profile information for new, adequate charts.

1971 Operations

The DAVIDSON conducted hydrographic surveys from a junction with 1970 surveys in Keku Strait, eastward into Sumner Strait.

History

1964--fixed aids to navigation recovered and identified; control for photogrammetric compilation was established; 1965--bubbler tide gage installed at Sumner Island for control of hydrography; 1966--tide gage installed at Kake Cannery pier; 1967--tide gage inspected Cape Decision; 1968--magnetic station observed at triangulation station Low; 1969--portable tide gages established in the Summit and the Devil's Elbow; an existing set of benchmarks on Beck Island was leveled; 1970--the DAVIDSON surveyed the northern portion of Keku Strait and Saginaw Bay; in south Keku Strait, bubbler gages were installed in several locations to provide tide data for hydrography; three transit magnetometer stations were observed and Coast Pilot work performed in locating a large standpipe in Wrangell which could serve as a landmark.

OPR-465

Hydrographic Survey
Clarence Strait, SE Alaska

Background

Resurveys were required as part of program to provide large-scale nautical charts for major waterways in Southeast Alaska.

1971 Operations

The PATHFINDER conducted basic hydrographic surveys in Clarence Strait, continuing northward from 1969 surveys at 55°49' N. The DAVIDSON worked in Whale Passage, Clarence Strait; completed 65.1 lineal nautical miles of launch hydrography on the LESTER JONES's boatsheets.

History

1968--Operations began with the installation of a Raydist shore station and tide gages; two shoal areas were developed and a field edit on the south shore of Clarence Strait was completed; 1969--the FAIRWEATHER and DAVIDSON installed tide gages at Lyman Anchorage, Union Bay, Thorne Head, and Thorne Bay. Velocity corrections were determined from Nansen casts, and bottom samples taken.

OPR-467

Wire Drag Investigations
Chesapeake Bay

Background

Project is a continuation of the wire drag of safety fairways along the East Coast.

1971 Operations

The RUDE and HECK worked to locate and clear various wrecks and obstructions in the southern end of Chesapeake Bay. A total of twenty-three items was investigated; two charted sunken wrecks were disproved; a Notice to Mariners was issued in two instances, and all other obstructions were located, recovered, cleared, removed, or considered no danger to navigation.

OPR-469

Shoal Investigation
Upper Cook Inlet, Alaska

Background

Survey undertaken to provide data for revisions of existing charts and for the new charts planned for the area.

1971 Operations

The PATHFINDER conducted a hydrographic survey in Upper Cook Inlet.

History

The project began in 1967. Operations included recovery, establishment, location and building of stations and signals for Shoran and visual hydrography.

The PATHFINDER in 1969 installed tide gages at Nikiski; located control for hydrographic signals and ran levels before undertaking launch hydrography; conducted geodetic surveys at Nikishka for control of hydrographic signals. Raydist towers were erected at Point Campbell and Point MacKenzie for control of launch hydrography at Knik Arm.

OPR-473

Hydrographic Survey
Massachusetts Coast

Background

Nautical charts based on modern depth profile surveys were needed to augment work which dated back to 1910. This project is a basic hydrographic survey of Massachusetts Bay from Cape Ann to Cape Cod.

1971 Operations

PEIRCE concentrated on the outer Cape Cod coast from Long Point to Chatham.

History

1969--two portable tide gages were installed and signals were built and located; 1968--hydrographic surveys of Beverly, Salem, and Marblehead Harbors were accomplished; 1969--the PEIRCE completed work on boatsheets PE 5-4-68, 10-1-69, 20-3-69, 20-4-69, 5-1-69, 10-2-69.

OPR-478

Hydrographic Survey
Shelikof Strait, Alaska

Background

The project provides data required to update existing chart coverage.

1971 Operations

The RAINIER conducted surveys in Shelikof Strait, progressing southwestward along the north side of the Strait, from Cape Douglas. The general area from the Cape southward to lat. 58°30' N was covered during the season.

OPR-479

Wire Drag
Safety Fairways
Gulf of Mexico

Background

Purpose of the project was to clear the safety fairways of Gulf of Mexico from Port Isabel, Texas to Boca Grande, Florida.

1971 Operations

Field operations began near Southwest Pass, Mississippi; one underwater obstruction was located. No other unreported hazards to navigation were located. In the Galveston Harbor area, four deficiencies were investigated and located. A least depth was obtained for three. Dives on one hang indicated the object was a small anchor attached to an underwater cable, which should be charted.

History

1970--RUDE and HECK investigated obstruction at 27°35.0' N, 82°53.7' W, Tampa Florida. A 36-foot shoal was encountered near a chartered 44-foot sounding at lat. 27°35" N, long. 82°54'40" W. A wire drag survey was conducted in the vicinity of Port Aransas, Texas. BAHIA HONDA, a wrecked shrimper, was located.

OPR-480

Wire Drag
Delaware Bay Entrance

Background

This project was undertaken to clear both the approaches to and within the anchorage area - lat. 38°58' N, long. 75°12' W in Delaware Bay entrance, and the traffic lanes within the buffer zones.

1971 Operations

The RUDE and HECK located and identified three sunken vessels.

History

1969--operations were commenced, but no usable data were gathered due to uncontrollable local conditions; 1970--the anchorage area and approaches inbound from the Lewes breakwater were cleared.

OPR-487

Hydrographic Survey
Cape St. Elias to Montague Island, Alaska

Background

A variety of local and national interests requires up-to-date large scale charts of the area. Surveys of record were made in 1898 and 1909-1916. Hydrographic surveys will verify the reported substantial uplift throughout the project area since the 1964 earthquake.

1971 Operations

The FAIRWEATHER conducted inshore hydrographic surveys westward from Cape St. Elias.

History

1969--Field operations began with a basic survey around Middleton Island; photogrammetric control job at Controller Bay; velocity corrections determined from Nansen casts; bottom samples were taken, and a tide gage installed at Katalla. Chart investigations were made at Kayak Entrance, Controller Bay, Cape Yakataga, Montague Island, and Knight Island Passage; 1970--the FAIRWEATHER premarked horizontal control stations for aerial photography.

OPR-489

Bottom Gravity
West Coast of U. S.

Background

Project was undertaken as part of a geodetic-marine gravity program to satisfy civilian and military geodetic needs. The project area was along the coast to the 100-fathom curve from San Francisco to Cape Flattery.

1971 Operations

The McARTHUR conducted bottom gravity observations on the continental shelf off the U. S. West Coast, concentrating on the northern portion. The project covers the area from Cape Flattery (48°20' N) to Monterey Bay (37°00'N) between the 5 and 100-fathom isobaths. Work also included the establishment of the southern half of the Cape Flattery Gravity Range prior to initiating the gravity survey of the West Coast. Additional work entailed the reoccupation of gravity stations observed by FAIRWEATHER during 1969 in the northern half of the Cape Flattery Gravity Range.

History

1969--the FAIRWEATHER worked to establish a 15 square mile gravity range in the vicinity of Gray's Harbor, Point Grenville, Washington; replaced tide gage at Willapa Harbor Dock, Tokeland, Washington.

OPR-492

Hydrographic Survey
Delaware Bay

Background

Project was undertaken to satisfy requests for new surveys and large scale chart coverage for the Bay. Surveys on record dated from 1880-1885. The amount of shoaling in the intervening years from estuarine dumping had to be determined to assure safe navigation.

1971 Operations

The WHITING resumed marine charting in the Delaware Bay and approaches. Hydrography commenced with WH 20-2-71, an all launch sheet. One launch worked from Mispillion River Inlet to conduct hydrography on WH 20-2N-71; the other worked WH 20-2S-71 and docked at the ship.

History

1970--the WHITING and Launch 1257 worked on the project. Hydrographic operations were conducted from Indian River Inlet to Cape Henlopen.

OPR-496

Premarking of Ground Control for Aerial Photography
Cordova Bay, Alaska

Background

Project was undertaken to provide ground surveys preparatory to hydrography. Hydrography was begun in 1953 and 1954, however, discrepancies in position control cannot be resolved and required a resurvey of the area.

1971 Operations

The DAVIDSON began premarking work on May 17 in Nichols Passage then continued into the Cordova and Kendricks Bay area; premarking was completed on May 22.

History

1970--the McARTHUR installed thirty 1:60,000 and one 1:20,000 scale premark panels for aerial photography.

OPR-497

Hydrographic Survey
Pago Pago Harbor, American Samoa

Background

This project was undertaken to provide the first detailed hydrographic survey of American Samoa's major harbor since the Navy survey of 1915.

1971 Operations

The SURVEYOR installed tide gages in the harbor and did launch hydrography from March 22 until completion of the project on April 15. Control was from conventional three-point sextant fixes. Sheet for harbor done at 1:5,000 scale; its approaches at 1:10,000 scale.

OPR-498

Hydrographic Survey
Umpqua River, Oregon

Background

Project will provide data to update existing nautical chart coverage and for a programmed small craft chart.

1971 Operations

The DAVIDSON conducted a visual hydrographic survey completing boat sheets DA 10-11-71 and 10-12-71. A small boat harbor survey (DA 2.5-1-71) was performed at Winchester Bay. Current observations were recorded.

OPR-500

SE Atlantic Coast Estuarine Studies

Background

This project, scheduled to continue for three to five years, will require observations of tidal currents, temperature and salinity of the entire coastal area, including estuaries, from Charleston, South Carolina to the vicinity of St. Augustine, Florida.

The purposes of the survey are to update tidal current prediction data and to provide water circulation data for pollution, ecology, coastal zone management and other engineering and scientific studies.

1971 Operations

The FERREL, Launch 1255, and Launch 1256, conducted a survey of Charleston Harbor and its approaches from early February until April. Salinity and temperature observations were made over the entire project area. Traverse lines in estuaries were run at station intervals of 0.25 miles or less; longitudinal lines were run at 1.0 mile intervals. The FERREL participated in a synoptic photogrammetric tidal current survey from Charleston to St. Helena, South Carolina.

OPR-501

NE Atlantic Coast Estuarine Studies

Background

This project, scheduled to continue for three to five years, will require observations of tidal currents, temperature and salinity of the entire coastal area including estuaries, from Rhode Island to Southern Maine.

The purpose of the survey is to update tidal and tidal current prediction data and to provide water circulation data to federal and local water resources agencies for flushing and transport analysis.

1971 Operations

The 1971 operations were conducted in Boston Harbor and had two basic observational concerns--surface currents and surface temperatures. FERREL's assignment was to place, telemeter, and recover 20 TICUS buoy systems at 140 predetermined stations in and around Boston Harbor. She also played a significant role in a photogrammetric surface current survey with concurrent infrared thermal mapping; was utilized as general support and provided two launches used for taking ground truth data and for tracking of dye.

PEIRCE provided two launches for ground truth stations, served as an anchored station for clearing photogrammetric models used to measure offshore surface currents and observed salinity/temperature/depth measurements.

RP-1-OC-71

Northeast Pacific Geophysical Study

Background

This project included observations of bathymetry, magnetics, gravity, and seismic profiling. Large volume water samples were filtered for the Battelle Northwest Institute; a gravity survey of Shelikof Straits was conducted for the University of Alaska; and dredge samples were obtained from seamounts in the Gulf of Alaska.

1971 Operations

The cruise was divided into three legs: Seattle to Honolulu, the project area centered around 34° N and 145° W, a region of abyssal hills and linear magnetic anomalies where a detailed survey was made in an area 80 by 450 miles centered around 33°30' N and 149° W. A reconnaissance line was run south of and parallel to the Murray Fracture zone. The primary purpose, Honolulu to Alaska, was to look at the structural features lying beneath the Aleutian Abyssal plain. These included a delineation of the eastern termination of the Chinook trough and the volcanic topography associated with the Magnetic Bight. Leg III was a gravity survey of Shelikof Strait, a region characterized by a broad gravity high.

RP-2-OC-1

Near-Surface Circulation Study
North Pacific Ocean

Background

This study was conducted jointly by NOAA's Pacific Oceanographic Laboratory (POL), and the Department of Oceanography, University of Washington (funded by IDOE/NSF). The purpose was to gather data to examine the validity of the theoretical notion that energy may flow downward out of the mixed layer whenever the currents there attain a critical value determined by the density gradient.

1971 Operations

The operating area was located 180 nautical miles west of Grays Harbor, Washington. Materials for the Salinity/Temperature/Depth (STD) sensor and electronics, and computer logging and processing facilities were provided by NOS. The Toroidal marker buoy, subsurface instrument arrays and the digitizer/digital tape recorder were provided by the sponsors. All project goals were attained through the successful deployment and recovery of the subsurface instrument arrays, and an extensive series of STD observations.

RP-4-OC-71

Internal Wave Investigation
NE Pacific Ocean, West of Vancouver Island

Background

The project was the fourth phase in the investigation of internal waves conducted jointly by NOAA's Pacific Oceanographic Laboratory (POL) and the Department of Oceanography, University of Washington. The three previous phases were: PMC/SP-6-68, RP-2-69, and RP-7-OC-70. Reports on the investigations are on file at POL.

1971 Operations

The purpose was to obtain a series of temperature observations at selected depths at each of two locations just seaward of the Continental Shelf. The data obtained supports a continuing investigation of internal waves and their role in the oceanic energy balance. A total of 215 STD casts were taken. All goals were attained through the successful deployment and recovery of two subsurface instrument arrays and the extensive series of STD observations.

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RP-5-OC-71

Juan de Fuca Rise and Fracture Zone
(SOVANCO-71)

Background

This project was conducted jointly by NOAA's Pacific Oceanographic Laboratory, and the Department of Oceanography, University of Washington. The specific purpose was to develop a 100 x 100 kilometer grid within an area bounded by 48° and 50° N, 128° and 130° W; to obtain heat flow measurements; and to map the bathymetry, basement topography, magnetic and gravity characteristics of the area. The grid area encompassed that portion of the Northeast Pacific where two major tectonic features, the northern end of Juan de Fuca Rise and the SOVANCO-71 Fracture Zone, intersect.

1971 Operations

The field operational goals were attained by the successful completion of 20 tracklines (bathymetry, magnetics, gravity, and SRP), 100 heat flow observations, 8 bottom core samples, and 4 bottom motion picture observations.

RP-6-OC-71

Currents in Juan de Fuca Canyon and Adjacent Waters

Background

The purpose of this project was to obtain direct and indirect observations of currents at selected positions on and across the Continental Shelf and Slope of Washington and in the Juan de Fuca Submarine Canyon. The project was conducted by NOAA's Pacific Oceanographic Laboratory.

1971 Operations

The project area extended along the coasts of Oregon, Washington and British Columbia in a strip of about 100 nautical miles width between latitudes 45°50' N and 49°05' N. Some observations were made in the Straits of San Juan de Fuca.

RP-7-SU-71

South Pacific Ocean
Samoa to Callao, Peru, to Seattle Traverse

Background

The purpose of this project was to (a) conduct a geophysical traverse across the South Pacific to examine in particular both the crustal structure from the South Fiji Basin across the ridges and basins of the Tonga Island Arc system and the magnetic anomaly sequences on the Pacific and Nazca plates; (b) to obtain a geophysical profile across the western extension of the Galapagos Rift Zone and the adjacent portion of the East Pacific Rise; and (c) to obtain a geophysical profile across the East Pacific Fracture Zone.

1971 Operations

The 1971 operations successfully obtained data as scheduled. These operations consisted of observations in bathymetry (narrow-beam), magnetics and gravity and used satellite navigation for control. The ship inported in Callao, Peru, and Pago Pago, American Samoa.

RP-8-DI-71

Trans-Atlantic Geotraverse (TAG)

Background

TAG involved three phases: The purpose of Phase I was to make continuous soundings and underway magnetic and gravity measurements between Cape Hatteras, N. C., and a point offshore Cap Blanc, Mauritania, and along two lines (N of this crossing) extending from 20° W longitude to the mid-Atlantic Ridge. Phase II, Port-to-port Las Palmas, Canary Islands, Spain, undertook to systematically investigate a representative area of the abyssal hills with bathymetric (narrow-beam), gravity, magnetic and selected seismic reflection (air-gun) profiles. Phase III collected a suite of igneous, metamorphic and sedimentary rocks along the Atlantic Fracture Zone between the mid-Atlantic Ridge and the NW African continental margin.

1971 Operations

Phase I goals were fulfilled completely. Phase II accomplished the first high-density systematic investigation of the abyssal hills in the Atlantic. The investigation comprised a 10 x 10 nautical mile grid on a 100 x 100 nautical mile area of abyssal hills between 30° and 30° W in the TAG corridor east of the mid-Atlantic Ridge. During Phase III, the DISCOVERER completed 4,000 nautical miles of narrow-beam echo sounding and 3,200 nautical miles of magnetics and gravity trackline, during sample-site surveys and along the TAG corridor.

Nine out of ten piston coring attempts were successful. Twelve surface and vertical mid-water planton tows were made; of nineteen dredge lowerings, made at nine localities along the fracture zone, three were successful and others yielded fragmental information. The ship operated out of Miami, Florida, and Las Palmas, Canary Islands, between early April and mid-June.

RP-9-DI-71

Currents & Chemistry of Sea Water
Cayman Sea, (CICAR)

Background

The project, in two phases, was planned to provide an estimate of the current structure of the Cayman Sea from the plotted depths of selected isotherms. The observations were focused on tides, and the relation of fast inertial currents to the distribution of density and chemical constituents of the sea water.

1971 Operations

Two in situ instrument packages were emplaced and retrieved after 30 days. These consisted of a current meter and a deep-sea gage each, one on Misteriosa Bank and one on Rosalind Bank. The biological oceanographic phase of DISCOVERER's program consisted of three separate sampling methods: underway sampling with the continuous plankton sampler, bongo net sampling to 200 meters at very slow speed underway, and opening-closing net sampling at selected depths to 400 meters on specified stations. These observations furthered the objective to investigate the currents and chemistry of sea water of the Cayman Sea so that an understanding can be obtained of how the current becomes organized into the loop current system of the Gulf of Mexico and what changes occur in the chemistry of the water along its path.

RP-9-RE-71

Circulation Studies
(CICAR)

Background

The RESEARCHER was engaged jointly with the DISCOVERER in two phases of these circulation studies. Cooperative Investigations of the Caribbbean and Adjacent Regions began in 1970 as an international cooperative study of all aspects of oceanography. The physical oceanographic interests of NOAA's Atlantic Oceanographic and Meteorological Laboratories are focused on tides, the relation of fast inertial currents to surface wind, and the distribution of density and chemical constituents of the water.

1971 Operations

The western Caribbean, Yucatan Channel, and the southeastern part of the Gulf of Mexico defined the project areas for both Phase I and Phase II. A 50-hour station off the Cape Kennedy, Florida, was to be occupied at the end of Phase II.

History

1970--the DISCOVERER ran two cruises: the first consisted of STD measurement in the Loop Current structure; two current meters and sensors were planted in the Yucatan Channel. The second continued measurements south of Key West and in the southwest Caribbean Sea, and included retrieval of the two current devices.

RP-11-DI-71

Deep Sea Tide and Current Project
(CICAR)

Background

On the day of sailing, the predicated path of Hurricane Edith necessitated a change in project plans. Rather than XBT data from the Yucatan Current, a line of STD stations in the Windward Passage was undertaken to extend the coverage of physical and chemical sampling done in July and August.

1971 Operations

Six STD and water sampling stations to maximum depths of 2,000 meters were occupied on a line of stations through the Windward Passage from the Cayman Sea to the Atlantic Ocean north of Hispaniola. Two stations on CICAR standard section b-2 were occupied prior to running to the northern most deep-sea tide gage site. Two gages were deployed there; STD and water sampling stations on standard section b-1 were occupied. Both deep-sea tide gages were recovered faultlessly. Only one from the northern site functioned satisfactorily, but a single record is considered an adequate result.

RP-14-PE-71

Gulf of Maine Sediment Study

Background

The purpose was to conduct in-place measurements of shear strength and bulk density in the Wilkinson Basin with a specially-designed Lehigh University instrument; to carry out systematic sub-bottom profiling of the basin with high resolution SRP gear to delineate the shallow layering (5 to 200 meters) beneath the basin floor; and to collect a series of selected sediment cores for laboratory studies. These data were used to establish a geotechnical reference test-area for detailed identification of its mass physical and chemical characteristics. The study was conducted under the guidance of AOML's Marine Geology and Geophysics Laboratory.

1971 Operations

Control was by Loran A. The Lehigh instrument functioned only on the initial lowering when shear strength measurement was obtained. Seismic profiling studies consisted of simultaneously firing of a 3.5 kHz profiler and a 1 cubic inch air gun to obtain high resolution profiles of the shallow sediment layers and to determine the thickness of Holocene sediments in the basin. Approximately 250 miles of trackline over the basin provided the required grid detail. Eight hydroplastic core samples, ranging in length from 9'3" to 5'10", were collected.

AMC-SP-1-WH-71

Suspended Sediment Studies

Background

The Smithsonian Institution requested suspended sediment samples for analysis in a study of sediment movement along the coast between Cape Fear and Cape Hatteras, North Carolina.

1971 Operations

The program involved the taking off water samples at fifteen stations. All data were processed by and released to the Smithsonian Institution.

AMC SP-2-RE-71

Geophysical Survey
Eastern North Atlantic Ocean

Background

This project was undertaken at the request and expense of another government agency. The data were classified and held by that agency and are not available for dissemination.

1971 Operations

The RESEARCHER conducted this survey which lasted from March 3 to May 28.

AMC-SP-3-PE-71

Cable Route Survey
West Palm Beach to Freeport to Nassau

Background

This reimbursable project for AT&T was designed to obtain bathymetric data for a proposed telephone cable route linking West Palm Beach, Freeport, and Nassau, Bahamas.

1971 Operations

Bathymetric data were plotted on scales of 1:150,000 for deepwater portions and 1:5,000 for inshore work. On inshore sheets at Freeport and Palm Beach, the scale was changed to 1:10,000 to allow for inclusion of available visual control. UQN Sonar #12 with precision depth recorder #161 was used for soundings. For control the ship used Decca Mark 12 navigation system on the Nassau-Freeport lines and Hi-Fix between Freeport and Palm Beach.

AMC-SP-4-RU/HE-71

Wire Drag
Block Island, R. I.

Background

The ESSO Tanker GETTYSBURG reported striking an uncharted obstruction in the passage between Block Island and Montauk Point. En route to the Block Island project, a reported obstruction was investigated at the entrance to Stamford Harbor, Stamford, Connecticut.

1971 Operations

An eight-foot square rock extending six feet off the bottom was located in the channel at the entrance to Stamford Harbor, Stamford, Connecticut. Position of the rock is lat. 40°00'46" N and long. 73°32'03" W. The least depth based on predicted tides is 7.5 feet at mean low water.

Two obstructions were located, one at lat. 41°07'28" N, long. 71°40'24" W, the other at lat. 41°07'24" N, long. 71°40'26" W. Both obstructions were hung at 38' and cleared at 36' mean low water based on predicted tides.

The 46' charted sounding at lat. 41°06'13" N, long. 71°40'35" W was disproved by a drag to 50' in two directions.

The obstruction reported by the ESSO Tanker GETTYSBURG was disproved by a drag to fifty-two feet in two directions.

AMC-SP-5-MI-71

Mona Passage Shoal Trackline

Background

This project originated at the request of Johns Hopkins University. The university specified the trackline coordinates to be run.

1971 Operations

Area involved was the shoal east of Cape Engano, Dominican Republic. A land-tie was made off Mona Island Light and the line run; a land-tie was made on the Puerto Rico mainland at the end of trackline operations. Omega and Loran A were used to control positioning. A position was obtained every 10 minutes and at each major course or speed change. The sounding interval was two minutes.

AMC-SP-6-RU/HE-71

Wire Drag
South Carolina - Florida Coast

Background

The purpose was to locate and clear, by wire drag, specific reported obstructions and known wrecks.

1971 Operations

The S/S HECTOR wreck was located 1/3 mile NW of its charted position at 33°00'04" N, 79°06'08" W, with a least depth of 12' mean low water and cleared by wire drag to 10' mean low water based on predicted tides. The wreck was extensive and in solid condition. This wreck will remain a hazard to navigation for several years.

The wreck of the S/S GULF AMERICA was not located at the charted position of lat. 30°16'40" N, long. 81°13'40" W. The area of a circle one-half mile in radius and centered at the above position was cleared by wire drag.

The 37-foot sounding at lat. 30°19'33", long. 81°18'17" was disproved by wire drag to a depth of 43 feet mean low water based on predicted tides.

AMC-SP-10-RU/HE-71

NOIC Equipment Test

1971 Operations

Tests were made in the Gulf Stream off Miami on an underwater releasing system for the National Oceanographic Instrumentation Center. All records were maintained by NOIC personnel; however, a cruise report was forwarded to AMC.

PMC-SP-1-MA-71

Chart Discrepancy Investigations
West Coast of U. S.

1971 Operations

Chart discrepancy investigations by ship hydrography were undertaken near Point Grenville, Washington and Coos Bay, Oregon. Control was established by Sea-Fix. The control was dependable and used effectively in delineation of the areas investigated.

PMC-SP-2-MA-71

Golden Gate Bridge Piers Tagline Survey
San Francisco

1971 Operations

A tagline survey of the north and south piers of the Golden Gate Bridge was accomplished. Boat work was done during periods of neap tides. Soundings were made at previously occupied tagline survey positions and reduced for tides observed at Ft. Point C. G. Station. The technique employed in occupying these positions was described in a report dated 1964.

PMC-SP-3-DA-71

Chart Discrepancy Investigations
SE Alaska

1971 Operations

Chart discrepancy investigations were made in Thomas Bay and Port Houghton. These investigations consisted of three uncharted rocks reported to exist in the vicinity of Port Houghton and a large uncharted rock off the northern tip of Ruth Island in Thomas Bay. Predicted tides were used in all investigations.

PMC-SP-4-RA-71

Shoal Investigation
St. Paul Harbor, Kodiak Is., Alaska

1971 Operations

A charted 4 1/2 fathom shoal in St. Paul Harbor was investigated by a launch party. Results were negative. Data from the standard tide gage at Kodiak Harbor were used for the reduction of soundings.

PMC-SP-5-MA-71

Current Survey
San Francisco Bay, California

1971 Operations

Because of many man-made structural changes in the shoreline, published current data in several areas was erroneous and had resulted in at least one ship accident. Eight current stations were assigned, most of which were required in shipping lanes. Observations were made for five days at each site with meters set at a depth of 15 feet. Conventional Geodyne current meters and "Roberts" type current buoys were used.

Several chart discrepancy items in San Francisco Bay and the lower Sacramento River were investigated. During the investigations of these items, evidence of need for more extensive work in the areas was uncovered.

PMC-SP-6-OC-71

Raytheon CESP Evaluation

Background

The Raytheon CESP correlator was operated during RP-6-OC-71 to gather data on unidentified echoes on the sounding record. There were indications of the possibility to gather thermocline information directly from echo sounders equipped with a correlator.

1971 Operations

The amount of data recorded was limited because the CESP did not become operational until a few days before the end of project RP-6 and project activities were being conducted on a tight schedule. Some control adjustments were made from time-to-time for testing purposes. Bottom multiple echoes interferred with the identification of the echoes under investigation. Recommendation was made that the 1972 field season would offer the opportunity to gather more data for this evaluation, and that investigation be continued until conclusive results had been obtained to determine the feasibility of using the CESP for obtaining pycnocline data.

PMC-SP-8-PF-71

Hydrography
Pontiac Bay, Lake Washington

Background

Project was a basic hydrographic survey for in-house planning of the area for the proposed NOAA Ship Base piers at Sand Point Naval Air Station.

1971 Operations

The project required about two weeks to complete and was accomplished by PATHFINDER personnel. Since photo-hydro support was not available, personnel also received training in planetable surveying of the shoreline.

PMC-SP-9-PF-71

Hydrography
Union Bay, Lake Washington Ship Canal

Background

Project was a basic hydrographic survey conducted to obtain data to update the nautical chart coverage.

1971 Operations

The project area extended from the Montlake Bridge, long. 122°18'12" at the western limit, and through Union Bay to long. 122°16'28" at the eastern limit. The southern limit of the project was at lat. 47°38'30". The visual-controlled survey was accomplished at the scale of 1:2,500. Photogrammetric support was not available and shoreline mapping was not required.